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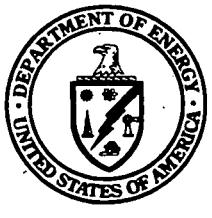
GJPO–MRAP–22

Monticello Vicinity Property Project

Site Assessment Report for Sutherland Brothers, Inc., Property (MP–00990–CS)

July 1995



U.S. Department of Energy
Grand Junction Projects Office

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Work Performed Under DOE Contract No. DE–AC04–86ID12584 for the U.S. Department of Energy

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Prepared for
U.S. Department of Energy
Albuquerque Operations Office
Grand Junction Projects Office

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19270

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EXECUTIVE SUMMARY

The U.S. Department of Energy-Grand Junction Projects Office conducted a site assessment at DOE ID No. MP-00990-CS, Sutherland Brothers, Inc., located at 1332 East Bar Cross Road, Monticello, San Juan County, Utah, in November 1993, September 1994, and May 1995. The site assessment was conducted to determine if Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances (other than radium-226) had potentially been released on the property. This was warranted because of the nature of past and present business practices at the property.

Thirty-seven areas of the property were evaluated to determine if hazardous substances had been potentially released to the environment. Twenty-eight of those areas were selected as areas of concern (AOC). Characterization is recommended for the following areas of concern:

1) two above-ground petroleum storage tanks, 2) an area in a large shed, 3) an area of stained soil near the roadway, 4) stained soil northwest and adjacent to the maintenance shop, 5) stained soil northeast and adjacent to the maintenance shop, 6) oil stained soil associated with a 55-gallon drum on a storage rack, 7) oil-stained soil associated with 55-gallon drum in a gravel area, 8) stained soil associated with suspect diesel fuel, 9) stained soil associated with several drums, 10) stained soil west of the paint storage shed, 11) soil and vegetation staining east and adjacent to the maintenance shop, 12) soil staining at the southeast corner of the maintenance shop, 13) soil staining at the southwest corner of the maintenance shop, 14) soil staining southwest of the maintenance shop, 15) soil staining west of the maintenance shop, 16) soil staining located between the maintenance shop and the storage trailer, 17) soil staining associated with an old pickup truck, 18) a stained soil area south of the maintenance shop, 19) a stained soil area associated with a late-model pickup truck, 20) stained soil associated with numerous overturned 55-gallon drums, 21) stained soil associated with pallets of 5-gallon containers, 22) soil staining in the embankment, 23) a pond, 24) a greenish-gray stained soil area, 25) a trash pit, 26) stained soil associated with twenty-eight 55-gallon drums, 27) stained soil associated with a yellow articulated loader, and 28) stained soil associated with a water truck.

A site-specific Sampling and Analysis Plan will be prepared to characterize the 28 areas of concern. A Site Characterization Report will be written to document the results of the sampling activity.

If suspect hazardous substances are unexpectedly encountered during remediation at this site in any uncharacterized area, the process outlined in the *Monticello Remedial Action Project, Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995) will be implemented.

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1.0 INTRODUCTION

The Monticello Peripheral Properties (MPPs) Site was placed on the Comprehensive Environmental Response, Compensation, and Liability Act's (CERCLA) National Priorities List in 1989 to ensure that appropriate actions are taken to protect public health and the environment from hazards created by past operations. The MPP project addresses the remediation of included residential and commercial properties in the city of Monticello which are contaminated by residue from wind-blown radioactive materials originating from the Monticello Mill Tailings Site, from ore stockpile residues, and from the use of uranium mill tailings as construction fill material.

Environmental restoration of the MPP is prescribed in a Federal Facility Agreement (FFA) signed in December 1988 among the U.S. Department of Energy Grand Junction Projects Office (DOE-GJPO), the U.S. Environmental Protection Agency, and the State of Utah. In accordance with the FFA and CERCLA, the DOE-GJPO is responsible for the cleanup of hazardous substances that equal or exceed risk-based standards on included MPPs and for management of wastes generated during the remediation in compliance with all applicable or relevant and appropriate requirements.

The DOE-GJPO conducted a site assessment at DOE ID No. MP-00990-CS, Sutherland Brothers, Inc., during November 1993, September 1994, and May 1995 to determine if CERCLA hazardous substances (other than radium-226) have potentially been released on the property. The site assessment was conducted because of the nature of past and current business activities at the site.

The site assessment (which consisted of an historical data review, interviews with site owner's representatives, site visits, review of aerial photographs, and field screening tests) was conducted in accordance with the processes and concepts outlined in the *Monticello Remedial Action Project, Special Waste Management Plan for the Monticello Mill Tailing Site and Vicinity Properties*[1] (DOE 1995) and the *Environmental Procedures Catalog* (Rust 1992). Additional guidance was obtained from the American Society of Testing and Materials (ASTM) Procedure E1528-95, *Standard Practice for Environmental Site Assessments: Transaction Screen Process* (ASTM 1993). The environmental setting of this MPP, including discussions of geology, hydrology, potential pathways and receptors, is presented in the *Final Remedial Investigation/Feasibility Study-Environmental Assessment for the Monticello, Utah, Uranium Mill Tailings Site* (DOE 1990). This Site Assessment Report was written to summarize the findings of the site assessment, to evaluate the identified areas of concern, and to provide recommendations for further actions, if warranted.

[1]The preparation of this document was in progress at the time this site assessment was conducted.

1.1 Definitions

Area of Concern - an area suspected of a hazardous substance release from analysis of site assessment information. Areas of concern generally warrant follow-up characterization or remediation.

CERCLA Hazardous Substance - the term "hazardous substance" means (A) any substance designated pursuant to Section 311(b)(2)(A) of the Federal Water Pollution Control Act, (B) any element, compound, mixture, solution, or substance designated pursuant to Section 102 of CERCLA, (C) any hazardous waste having the characteristics identified under or listed pursuant to Section 2001 of the Solid Waste Disposal Act (SWDA) (but not including any waste the regulation of which under the SWDA has been suspended by Act of Congress), (D) any toxic pollutant listed under Section 112 of the Clear Air Act (CAA), (E) any hazardous air pollutant listed under Section 112 of the CAA, and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to Section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under sub-paragraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Contaminant or Pollutant - as defined by Section 101(33) of CERCLA, includes, but is not limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions, or physical deformations, in such organisms or their offspring. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under Section 101(14) (A) through (F) of CERCLA, nor does it include natural gas, liquified natural gas, or synthetic gas of pipeline quality. In conducting a removal action, the term contaminant or pollutant means any contaminant or pollutant that may present an imminent and substantial danger to public health or welfare.

On-site Assessment - an on-site visit to determine whether there is a release or potential release and the nature of the associated threats. The purpose is to augment the data collected during the property records research and to generate, if necessary, limited sampling and other field data.

Release - means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant). This

definition excludes, among other things, any release of source, byproduct, or special nuclear material from any processing site designated under Section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978. For purposes of this Site Assessment Report, release also means threat of release.

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2.0 SITE LOCATION AND DESCRIPTION

Sutherland Brothers, Inc., is located at 1332 East Bar Cross Road, Monticello, San Juan County, Utah. A Monticello vicinity map is provided as Figure 1. A detailed map of the property is provided as Figures 2a and 2b.

The 257-acre site is located 4 miles east of the Monticello Mill Tailings Site. Montezuma Creek (which is the major drainage and also the drainage from the millsite) traverses the southern portion of the property. The topography on the northern part of the property slopes gently to the south, towards Montezuma Creek. A cliff-forming sandstone unit of the Dakota Formation forms steeper topography, also sloping to the south, on the southern section of the property. Montezuma Creek drainage is located at the base of the steeper section, and is characterized by flat terrain, sloping gently to the east. A natural gas pipeline was recently constructed traversing the middle of the property in a north/south direction.

The site rests on the middle to upper portion of the Dakota Sandstone Formation where there are interbedded facies of sandstones, shales, and coal. Carbonaceous sands and shale are readily identifiable in surface materials. The thin coal beds, up to 2 feet thick, have been shown to be above background for radioactivity in prior investigations. Evidence of a gravel and sand pediment is located north of the property. Remnants of this pediment may also be seen on the hill south of the maintenance shop area.

For ease of reference, the property is divided into three general north/south areas, detailed in Figures 2a and 2b. Improvements on the property include an office building, a maintenance shop, a large shed, some smaller sheds, storage trailers, and a double-wide mobile home. Storage for operative and inoperative equipment is located in the boneyard area, on the eastern portion of the property. A pond, approximately 75 feet wide by 300 hundred feet long, is located southeast of the maintenance shop. The depth of the pond is uncertain, but is estimated at greater than 10 feet. A farm adjoins the property to the west and the Monticello sewage lagoons are located to the north and east. A private residence is located across the roadway, north of the Sutherland Brothers, Inc., office building.

The utilities for the site are described below.

- The only known gas line on the property is an underground commercial natural gas pipeline.
- An overhead electric line and an underground telephone line run from the roadway to the office building.
- Underground electrical and telephone lines run between the office building and the maintenance shop.

- North of the office building, there are approximately 10 trailer spaces. Piping that runs to a leach field and other underground utilities are associated with each trailer space. The leach field is located to the southwest and adjacent to the office building. A network of septic lines extends from the office building, the double-wide mobile home, and the trailer spaces to the leach field.

- Two groundwater wells are located on the property, adjacent to the double-wide mobile home. A shallow well was drilled several years ago but yielded non-potable water. A second, deeper well was drilled shortly after the first well was drilled to obtain suitable water for domestic purposes. The specific depths of the wells are unknown. There is a network of underground water lines from the deeper well to the various trailer spaces, the office building, and the paint storage shed.

- A copper line was observed exiting the east side of the maintenance shop and entering the ground. It is attached to the heating unit in the maintenance shop. It is unclear where this line originates, and in fact the point of origin was never determined.

3.0 SITE ASSESSMENT SUMMARY

3.1 Description of Prior and Current Land Use

Historical and current ownership information on the use of the property was obtained through a property title search (see Attachment 1). Land use information was obtained from interviews conducted with Sutherland Brothers, Inc., employees, Mr. Wade Dalton and Mr. Ted Royer, to supplement the title search information. Interview notes are contained in Attachment 2.

Historically, the land was used for agricultural purposes, primarily livestock grazing. The property has since been purchased by Sutherland Brothers Drilling in 1983, and has been used as maintenance and storage of drilling and heavy equipment and stockpiling of uranium, copper, silver, and gold ores. Provided below is a general description of the activities that have been performed on the site.

- Historically, the land was used for agricultural purposes, primarily livestock grazing.
- One of the previous owners stockpiled uranium ore in the eastern section of the property. The ore has since been removed.
- The Sutherlands were involved in various drilling operations (Sutherland Brothers Drilling), and performed drill rig maintenance on the site. Inoperable drilling equipment and related machinery have been discarded on portions of the property.
- Approximately 40 acres of the property have been used for the storage of scrap metal, vehicles and vehicle parts, and a truck maintenance shop operation.
- In 1990, the Sutherlands stockpiled approximately 200 tons of copper, gold, and silver ore on the property. This material has since been removed.
- No pesticides or herbicides were used on the property.
- No electrical transformers were used or stored on the site.
- No underground storage tanks are present on the site.
- Asbestos-containing materials are not known to have been used or stored on the site.
- A neighboring property owner continues to graze cattle on the property, as of the date of this report.

The property is divided into three areas based on current usage, as shown in Figures 2a and 2b. The western-most area is the Office Building Area. It contains the office, fuel tanks, storage trailers, several trailer spaces, a double-wide mobile

home, and several sheds. The central portion of the property is identified as the Maintenance Shop Area. Contained within the Maintenance Shop Area is the maintenance shop, the pond, a paint storage shed, and a storage area for 55-gallon drums and containers, discarded equipment, used drill bits, and assorted drilling-related debris. The eastern-most section of the property is identified as the Boneyard Area, which contains unimproved roads that provide access to the boneyard storage area, abandoned structures on the southern portion of the property, a trash pit, and the location that was allegedly used to stockpile uranium ore, as shown in Figure 2b. Much of the area within the Boneyard Area is natural grasses and pinion/juniper forest. An area approximately 350 feet by 325 feet has been cleared for the actual boneyard storage area, where numerous discarded vehicles and equipment are stored. Used equipment and various kinds of debris surround the office, maintenance shop, and the boneyard. Copper, gold, and silver ore were stockpiled on the property in the past, but it is unclear where the stockpile area was located.

Cut and fill activities have occurred on various areas of the property, particularly in the Maintenance Shop Area and the Boneyard Area. The topography slopes gently towards Montezuma Creek, to the south. Flattening of the original topography has occurred in the Maintenance Shop Area to provide suitable areas for parking, building construction, and equipment storage. The eastern edge of the fill area encroaches into the drainage that leads to the pond. Used equipment, drums, buckets, and various items are stored at the top edge of the embankment and litter the embankment face. Removal of soil from the pond area appears to have occurred to increase the pond storage capacity. Significant grading activities have occurred in the area northeast of the boneyard, where large piles of gravels/cobbles and topsoil exist.

The Sutherlands have moved most of their operations to Naturita, Colorado. Only Mr. Ted Royer and Mr. Wade Dalton are working at the Monticello property. They are providing most of the office support for the company. Maintenance operations for road hauling or drilling equipment may return to the Sutherland property if construction activities increase in the Monticello area. Site conditions were found to change frequently, as this site is part of an on-going operation. Equipment observed during previous site walk-throughs was not present during the May 1995 site walk-through.

3.2 On-site Assessment

Mr. Dalton and Mr. Royer were interviewed during the on-site assessment, but did not accompany the field personnel on the walk-through of the property. Areas of the property were evaluated utilizing the field recognition criteria described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995). Information obtained from the interview process, observations made by the field personnel, and the results of on-site assessment techniques employed at the property (i.e., the use of a photoionization detector [PID], and limited biased soil sampling in conjunction with immunoassay-based technology for field screening for PCBs) are

described in this section by potential suspect hazardous substance area of concern.[2] Unless specifically noted, these potential areas of concern are in non-radiologically contaminated areas. Areas discussed in this section, including locations where PID[3] readings were taken and where the soil sample was collected for PCB immunoassay field-screening purposes are identified on Figure 2a and 2b. Table 1 provides a summary of each potential area of concern, field screening results, and results of PCB immunoassay field-screening test obtained during the on-site assessment.

Office Building Area:

The following items are within the approximate 5-acre area on the western portion of the property, as shown in Figure 2a.

Above-Ground Petroleum Storage Tanks (Area 1):
Two large above-ground petroleum tanks (estimated to be between 5,000 and 10,000 gallon capacity) are located south of the office building. The southern-most tank is partially full of diesel fuel (estimated at 2,000 gallons). The northern-most tank is empty. These tanks were probably used to fuel vehicles for the Sutherlands' operations. Approximately 200 square feet of stained soil was noted around both of these tanks, particularly the southern-most tank, as shown on Figure 2a. A small sump, that appears to be constructed of wood, is located beneath the outlet from the tank. The sump appears to be full of fuel. PID field-screening was not conducted in this area.

Large Shed (Area 2):
South of the tanks is a large shed with a dirt floor which houses equipment, discarded items, empty plastic drums, a boat, and a vehicle. The drums were broken or split. No notable soil discolorations were observed around the drums. It is not known what the drums contained or what they were used for. Several bags of a white granular material were stacked against the north wall of the shed. Several of the bags had broken open and the contents spilled onto the dirt floor. White-colored crystal growth was associated with the spilled contents. PID field-screening was not conducted in this area.

Used Tire Storage Area (Area 3):
Used tires are stored south of the large shed. None of the field recognition criteria were identified in this area. PID field-screening was not conducted in this area.

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[2]Guidance for conducting the site investigation was obtained from American Society for Testing and Materials (ASTM) procedure E1528-93, "Standard Practice for Environmental Site Assessments: Transaction Screen Process."

[3]Maintenance, calibration, and operation of the PID are the responsibility of Rust's Health, Safety, and Security (HS&S). HS&S personnel are properly trained in the use of this equipment and are present on site at the time of the on-site assessment. (Rust Procedure HSSIH-0012, Operation of the hNu Photojonization Analyzer of the Health, Safety, and Security Desktop Procedures Manual [RUST Geotech Inc., 1993] establishes the steps necessary for the operation of the PID.) PID readings were obtained at the air/suspect hazardous substance interface.

Un-erected Batch Plant (Area 4):
East of the tires is a large un-erected batch plant that was purchased in Moab, Utah. The batch plant was previously used to dispense gypsum. None of the field recognition criteria were identified in this area. PID field-screening was not conducted in this area.

Stained Soil (Area 5):
An area of approximately 50 square feet of stained soil is located approximately 60 feet east of the large storage shed. Because the stained soil is in close proximity to the road that leads to the double-wide mobile home, it appears to have originated from several gallons of petroleum product leaking from a vehicle. There are no containers in the area to indicate that it originated from a containerized liquid. PID field-screening was not conducted in this area.

Maintenance Shop Area:

The metal maintenance shop building is approximately 30 feet wide by 45 feet long. The approximate 7-acre area surrounding this building is the Maintenance Shop Area, as shown in Figure 2a. The maintenance shop contains a few containers of equipment cleaner or solvents, various lubricating oils for motorized machinery, unused oil, bags of drilling mud, tools, and pieces of equipment that were being maintained.

The following description is of the area north of the maintenance shop.

Stained Soil Northwest and Adjacent to Maintenance Shop (Area 6):
On the northwest side and adjacent to the maintenance shop are two 55-gallon drums that have been overfilled with an oil-like substance that appears to be waste oil. The oil has been spilled, leaked, and overflowed from the drums, resulting in approximately 200 square feet of stained soil. The soil in part of the area is saturated with oil and is pooled in several places. Vegetation is absent in this heavily stained area. It is suspected that the oil-like stains resulted from improper disposal of automotive waste oil. PID field-screening conducted on the oil spots indicated volatile organics of 2 ppm.

Stained Soil Northeast and Adjacent to Maintenance Shop (Area 7):
On the northeast side and adjacent to the maintenance shop are two additional 55-gallon drums. The drums have been overfilled and are leaking with what appears to be automotive waste oil. The oil has been spilled, leaked, and overflowed from the drums, resulting in approximately 300 square feet of stained soil. The soil in part of the area is saturated with oil and is pooled on the surface. Vegetation is absent in this heavily stained area. It is suspected that the oil-like stains resulted from improper disposal of automotive waste oil. PID field-screening conducted on the oil spots indicated volatile organics of 2 ppm.

Pile of Gypsum and Broken Battery (Area 8):
Also to the north of the maintenance shop is a large pile of gypsum, approximately 6 feet high by 10 feet wide by 14 feet long. A broken lead-acid battery was originally observed

near this pile; however, it could not be located during the May 1995 site walk-through. No stained or crystallized soil was noted under or around the battery during the previous site walk-throughs. PID field-screening conducted in the area indicated no organic vapors.

Oil Stained Soil Associated with a 55-Gallon Drum on Storage Rack (Area 9):
A leaking 55-gallon drum is located northeast of the maintenance shop, on the embankment above the drainage that leads to the pond. A small dispensing spigot is mounted on the drum face. The drum is stored on its side on a drum storage rack. The drum has leaked into the soil, resulting in an approximate 10 square-foot stained soil area. The soil in this area is saturated with what appears to be un-used automotive oil, as the stain is relatively light in color, and the use of a drum storage rack may indicate that it was used for dispensing motor oil. PID field-screening was not conducted in this area.

Oil-Stained Soil Associated with 55-Gallon Drum in Gravel Area (Area 10):
A 55-gallon drum laying on its side is located northeast of the maintenance shop, near the embankment above the drainage that leads to the pond. The drum has leaked into a small area of gravel and soil, resulting in an approximate 8 square-foot area of stained soil and gravel. The soil is light- to dark-brown in color. PID field-screening was not conducted in this area.

The following description is for the area south of the maintenance shop.

Stained Soil Associated with Suspect Diesel Fuel (Area 11):
A discarded piece of equipment is located southeast of the maintenance shop, on the embankment above the drainage that leads to the pond. The equipment appears to be part of a front bumper, and has what appears to be a diesel fuel storage tank mounted on it. The tank has leaked into the surrounding soil, resulting in an approximate 10-square foot heavily stained soil area. The leaking material is weathered, and is dark-brown to black in color. PID field-screening was not conducted in this area.

Discarded Brake Pads (Area 12):
Southeast of the maintenance shop, on the west rim of the drainage area, scrap metal, assorted junk, and numerous brake pads have been discarded. The brake pads do not appear to have been weathered to the point of degradation in their current state.

Stained Soil Associated with Drums (Area 13):
Two leaking drums are located southeast of the maintenance shop, resulting in an area of approximately 6 square feet of stained soil. The soil is saturated in this area and appears to be waste automotive oil. PID field-screening was not conducted in this area.

Stained Soil North of Paint Storage Shed (Area 14):
An empty 55-gallon drum is being stored on a drum storage rack on the north side of the Paint Storage Shed, which appears to have been used for fuel dispensing. The soil

beneath the drum is slightly stained, resulting in an area of approximately 6 square feet of stained soil. PID field-screening was not conducted in this area.

Stained Soil West of the Paint Storage Shed (Area 15):
Approximately 200 square feet of slightly stained soil is located on the west side of the paint storage shed. The staining appears to be weathered. There are no containers in the area to identify the source of the staining. PID field-screening conducted in this area indicated volatile organics of 1 ppm.

Soil and Vegetation Staining East and Adjacent to Maintenance Shop (Area 16):
An area of stained soil and vegetation is located adjacent to and east of the maintenance shop. The very black color of the stained soil is against the foundation of the shop, which suggests it may have resulted in the disposal of waste automotive oil. The area is approximately one foot wide and four feet long. Copper tubing runs from a heating unit located in the building, exits the building approximately 4 feet up on the wall, and enters the ground in this area. This area may be associated with radiological Deposit C. PID field screening was not conducted in this area.

Soil Staining at the Southeast Corner of Maintenance Shop (Area 17):
An approximate 100-square-foot area of very heavy oil staining is located at the southeast corner of the maintenance shop. The appearance and black color of the staining suggests that waste oil was dumped out of the maintenance shop. The soil is saturated and waste oil is pooled on the surface of the soil. PID field-screening conducted in the oil-stained area indicated organic vapors of 1 ppm. Two small buckets and two 5-gallon containers were located in this area. A sample was collected 17.25 feet south of the southeast corner of the maintenance shop for PCB field-screening. This area may be associated with radiological Deposit C.

Soil Staining at the Southwest Corner of Maintenance Shop (Area 18):
An area of approximately 200 square feet of stained soil is located at the southwest corner of the maintenance shop. The soil staining is very black in color and is in close proximity to the door of the shop, suggesting that it resulted from waste oil being discarded out of the shop door. Two 55-gallon drums, labeled "High and Low Pressure Hydraulic Systems Oil, Hydraulic Oil AW, ISO 68, Chevron - Kellerstrass Oil Company, 2450 Wall Ave., Ogden, Utah, 84401, 392-9516," were previously stored in this area, but were not present during the May 1995 site walk-through. PID field-screening conducted in this area indicated organic vapors of 1 ppm.

Soil Staining Southwest of Maintenance Shop (Area 19):
Approximately 300 square feet of slightly oil-stained soil is located southwest of the maintenance shop. Consistent with the property usage and the close proximity to the maintenance shop, the source of the staining is most likely fluids leaking from vehicles parked in front of the maintenance shop. PID field-screening was not conducted in this area.

Soil Staining West of Maintenance Shop (Area 20):
An approximate 50 square-foot area of slightly stained soil is located west and adjacent to the storage trailer, which is located west of the maintenance shop. No containers were located in the area that would identify the source of the staining. PID field-screening was not conducted in this area.

Soil Staining Located Between Maintenance Shop and Storage Trailer (Area 21):
A truck trailer, used to store equipment, is located approximately 3 feet west and adjacent to the maintenance shop. Five 55-gallon drums and four 5-gallon metal cans are stored in the area. At least one of the drums has leaked into the surrounding soil, resulting in approximately 50 square feet of oil-stained soil. PID field-screening was not conducted in this area.

Soil Staining Associated with Old Pickup Truck (Area 22):
Approximately 10 square feet of very black oil stained soil is located beneath and adjacent to an old pickup truck, south of the maintenance shop. The staining appears to have resulted from crankcase waste automotive oil that has spilled from the truck during dismantling. PID field-screening was not conducted in this area.

Stained Soil Area South of Maintenance Shop (Area 23):
Two areas of stained soil are located approximately 100 feet south of the maintenance shop. An approximate 6-foot square area and an approximate 100-square foot area are in close proximity to each other. PID field-screening was not conducted in these areas.

Stained Soil Area Associated with Late-Model Pickup Truck (Area 24):
A late-model pickup truck is parked approximately 120 feet south of the maintenance shop. The engine has been removed and placed in the bed of the truck. Engine oil has leaked out of the engine in the pickup bed and into the soil, resulting in approximately 6 square feet of very black oil stained soil. PID field-screening was not conducted in this area.

Stained Soil Associated with Numerous Overturned 55-Gallon Drums (Area 25):
Approximately 150 feet south of the maintenance shop, on top of embankment above the drainage that leads to the pond, seven 55-gallon drums and thirteen 5-gallon metal cans are located. The drums are laying on their sides, and several are leaking into the surrounding soil. Several of the 5-gallon containers are also leaking. The soil is heavily saturated, resulting in approximately 10 square feet of stained soil. PID field-screening conducted in the oil-stained area indicated organic vapors of 1 ppm.

Stained Soil Associated with Pallets of 5-Gallon Containers (Area 26):
Approximately 180 feet south of the maintenance shop, on the top of the embankment above the drainage that leads to the pond, are numerous pallets of 5-gallon plastic containers. Several of the containers were cracked open and leaking their contents onto the pallets and the surrounding soil. South and adjacent to the two stacks of pallets, a very yellow-colored soil staining and crystalline growth is present. The area of staining

is approximately 2 square feet. Additional areas of slightly yellow and green soil staining is present in the area surrounding the containers. PID field-screening conducted in one of the containers indicated no organic vapors.

Broken Lead-Acid Batteries (Area 27):
Approximately 250 feet south of the maintenance shop, 3 broken lead-acid batteries are laying on the soil. There are no indications that the contents have leaked onto the soil. It appears that the batteries may have been broken at a different location and are being stored in this area. PID field-screening was not conducted in this area.

Soil Staining in Embankment (Area 28):
Approximately 30 feet off the southeast corner of the paint storage shed, an oil stain appears to be running down the embankment above the drainage that leads to the pond. It could not be determined if the staining was from a liquid that spilled down the embankment, or if it was leaking out of the embankment from a source area upgradient. The staining is halfway down the embankment, approximately 2 feet wide and 10 feet long. PID field-screening was not conducted in this area.

Pond (Area 29):
The pond, south of the maintenance shop, is fed by a small spring located in a drainage to the south and east of the shop. It appears that excavation of soil and the sandstone unit underlying the northern part of the property has occurred in order to increase the storage capacity of the pond. The pond is primarily used to water livestock and for agricultural purposes. Seven used automobile tires were observed in and around the pond. No oil-like sheen was observed on the pond surface or were there visible indications that petroleum products have been released to the pond. The dam at the southern edge of the pond is leaking water into Montezuma Creek.

Paint Storage Shed (Area 30):
A small wooden paint storage shed is located south of the maintenance shop, and west of the drainage that leads to the pond. The shed is used to store assorted cans of paint and some unused motor oil. No spilled paints or oils were observed. PID field-screening was not conducted in this area.

Boneyard Area:

The boneyard area is located to the east of the maintenance shop area across the drainage that leads to the pond, as shown in Figure 2b. Scrap metal and various used and inoperable equipment are stored in this area. The boneyard comprises approximately 30 acres. There are parts of tanker trucks, a drill rig derrick, old cars, a small dozer, a dump truck, rusty storage tanks, truck engines, empty 55-gallon drums, vehicle transmissions, and various scrap metal objects.

Greenish-Gray Stained Soil (Area 31):
Southeast of the boneyard is a large flat area with greenish-gray stained soils, approximately 180 feet by 75 feet. The soil and rocks in the area are stained a green color, indicative of that produced by high concentrations of copper-rich minerals. Information obtained during interviews conducted with owner representatives indicate that a stockpile of copper, gold, and silver ore was stored on the property; however, the location of the stockpile is unknown. The area is associated with radiological Deposit W. Although it is believed that uranium ore was stockpiled here in the past, the exact location of the stockpile is uncertain. PID field-screening conducted in the middle of the greenish-gray stained soils indicated no organic vapors.

Pile of Unbroken Batteries (Area 32):
During the first site visit, nine unbroken batteries were piled in the west central portion of the boneyard. However, the batteries have since been removed. There was no visual indication that any of these batteries had leaked fluids onto the soils.

Trash Pit (Area 33):
On the northeast side of the boneyard, there is a trash pit area containing empty 5-gallon buckets, paint and oil cans, and some household debris. The trash pit is 50 feet long, 10 feet wide, and 3 feet deep. The trash pit is only partially filled with debris. The debris was approximately 1.5 feet deep and lying on the soil. None of the debris was covered with soil and no visible soil stains were observed. During the May 1995 site walk-through, the trash pit was observed to have been filled in with soil. Debris remained on the surface, but appeared to be household debris. PID field-screening conducted in the debris near the edge of the soils, during previous site walk-throughs, indicated no organic vapors.

Stained Soil Associated with Twenty-Eight 55-Gallon Drums (Area 34):
During previous site walk-throughs twenty 55-gallon drums were found at the southwest side of the boneyard. During the May 1995 site walk-through, twenty-eight 55-gallon drums were found in the same location. One of the drums was overturned and contained a liquid material, but did not appear to be leaking. Five of the drums were upright and contained an oil-like liquid, at least two of which were leaking and overflowing. The remaining drums were empty. Approximately 25 to 30 square feet of oil-stained soils, with several areas of pooled liquid that appeared to be oil, surrounded the two leaking drums. PID field-screening conducted in the most heavily stained soils in this area indicated no organic vapors.

Stained Soil Associated with Yellow Articulated Loader (Area 35):
A partially dismantled, yellow articulated loader is located in central portion of the boneyard. Two areas of oil-stained soil are located underneath the loader. One area of soil staining is located under the engine/transmission area of the equipment. The engine of the loader has been removed, and the engine/transmission fluids have drained onto the ground. The second area is located at the front end of the loader. Part of the hydraulic system has been dismantled, and a liquid has drained onto the ground. It is reasonable to

assume that the liquid is hydraulic fluid. PID field-screening was not conducted in this area.

Stained Soil Associated with Water Truck (Area 36):
A water truck is located in the central portion of the boneyard. "Sutherland Brothers Drilling" is stenciled on the doors of the truck. The engine has been removed from the truck, and the transmission/engine fluids allowed to drain onto the soil. The heavy staining is weathered in this area. PID field-screening was not conducted in this area.

Large Tank (Area 37):
A large tank is laying on the top of the ground in the middle of the boneyard. The tank is approximately 1/4 full of liquid, as could be observed from the fill and vent spouts. The tank is not leaking and appears to be in good shape. PID field-screening was not conducted in the tank.

4.0 DATA/INFORMATION ANALYSIS

This section provides an interpretation of the information described in previous sections and specifies a recommended action or no action for further characterization. Due to the large number of smaller oil-stained areas, not all areas will be sampled. Spot management is not recommended. It is the DOE-GJPO's position that non-radiologically contaminated used or waste automotive oils that have been released to the environment by spilling or container leakage will be characterized if the spill or leakage represents significant[4] release to the environment. Areas were selected as areas of concern because they exhibited worst-case staining, were most representative of the staining in a general area, or were unique in nature. Sampling and analysis of the identified areas of concern will provide valuable information as to the necessity to sample and analyze areas not identified as areas of concern. If the soils containing spilled or leaked waste automotive oils are found to contain hazardous substances in concentrations that exceed a risk-based cleanup criteria, the soils will be remediated as hazardous substances per the *Monticello Remedial Action Project, Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995). The location of each area selected as an area of concern (AOC) is shown in Figures 3a and 3b. A general overview of recommended actions is described below.

Office Building Area:

During the site visits several areas were identified as areas of concern.

Above-Ground Petroleum Storage Tanks (Area 1):
The approximate 200-square-foot area of stained soil surrounding the above-ground petroleum tanks shows indications of spilling from fueling vehicles and equipment. Based on evidence of a release of potential hazardous substances to the environment, this area is considered an area of concern, and is identified as AOC-01 on Figure 3a.

Large Shed (Area 2):
South of the tanks is a large shed with a dirt floor which houses equipment, discarded items, empty plastic drums, a boat, and a vehicle. Broken or split drums were noted in previous site walk-throughs, but no evidence of the drums was noted in the May 1995 walk-through. The contents of the bags containing the white granular material and the associated crystalline growth is unknown. Based on the lack of information as to the contents of the bags, this soil area is considered an area of concern, and is identified as AOC-02 on Figure 3a.

Used Tire Storage Area (Area 3):
Based on the lack of visual indications that dumping of suspect hazardous has occurred in this area, the used tire storage area is not considered an area of concern.

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[4] The term significant is assumed to represent a release of a liquid to the environment that could result in contiguous soil staining of at least several inches deep and three or more feet along any horizontal surface axis. The concept of significant release is applied on a case-by-case basis, and includes taking into consideration the potential hazardous substances involved in a release to the environment.

Un-Erected Batch Plant (Area 4):
None of the recognition criteria were observed in the area surrounding the un-erected batch plant, stored east of the tires. Based on this information, this area is not considered an area of concern.

Stained Soil (Area 5):
The approximate 50-square-foot area of stained soil located approximately 60 feet east of the large storage shed shows visual indications of a release of potential hazardous substances. Because there is little known about the source of the stained soil, this area is considered an area of concern, and is labeled AOC-03 on Figure 3a.

Maintenance Shop Area:

The following description is of the area north of the Maintenance Shop Area.

Stained Soil Northwest and Adjacent to Maintenance Shop (Area 6):
The area on the northwest side and adjacent to the maintenance shop shows visual indication of potential suspect hazardous substances being released into the soil area. Spills and continued leaking of the drum contents appears to have occurred for quite some time, and soil staining and pooling of what appears to be waste oil is present on the soil surface. Based on this information, this area is considered an area of concern and is labeled AOC-04 on Figure 3a.

Stained Soil Northeast and Adjacent to Maintenance Shop (Area 7):
The soil staining and pooled oil on the surface of the soil at the northeast side and adjacent to the maintenance shop shows visual indications of potential hazardous substances being released to the environment. Based on this information, this area is considered an area of concern and is labeled AOC-05 on Figure 3a.

Pile of Gypsum and Broken Battery (Area 8):
Gypsum is a common calcium sulfate mineral. The discarded battery could not be located in subsequent site walk-throughs and there were no visual indications that it had leaked into the soil. Based on this information, this area is not considered an area of concern.

Oil Stained Soil Associated with a 55-Gallon Drum on Storage Rack (Area 9):
The leaking 55-gallon drum located northeast of the maintenance shop, on the embankment above the drainage that leads to the pond, shows visual indications of potential hazardous substances being released into the soil. The potential exists for additional release, as the drum contains additional liquid. Based on this information, this area is considered an area of concern and is labeled AOC-06 on Figure 3a.

Oil-Stained Soil Associated with 55-Gallon Drum in Gravel Area (Area 10):
The leaking 55-gallon drum laying on its side, located northeast of the maintenance shop, shows indications of potential hazardous substances being released into the soil. Based on

this information, this area is considered an area of concern and is labeled AOC-07 on Figure 3a.

The following description is for the area south of the maintenance shop.

Stained Soil Associated with Suspect Diesel Fuel (Area 11):
The soil area surrounding the discarded piece of equipment, located southeast of the maintenance shop, shows visual indications of potential hazardous substances being released to the environment. Based on this information, this area is considered an area of concern and is labeled AOC-08 on Figure 3a.

Discarded Brake Pads (Area 12):
The discarded brake pads shows no visual indications of degradation and weathering in their current state. Based on this information, this area is not considered an area of concern.

Stained Soil Associated with Drums (Area 13):
The two leaking drums located southwest of the maintenance shop, show indications of potential hazardous substances being released to the surrounding soil. The soil staining appears to be the result of waste oil being discarded into leaking drums, and spilling on the surface. Based on this information, this area is considered an area of concern and is labeled AOC-09 on Figure 3a.

Stained Soil North of Paint Storage Shed (Area 14):
The empty 55-gallon drum stored on a drum storage rack adjacent to the paint storage shed has not contributed to significant soil staining in the area. The stained area is quite small, and there does not appear to be extensive subsurface staining. The drum is empty, and therefore the potential for additional release is low. Based on this information, this area is not considered an area of concern.

Stained Soil West of the Paint Storage Shed (Area 15):
The approximately 200-square-foot area of slightly stained soil on the west side of the paint storage shed shows visual indications of potential hazardous substances being released to the environment. The staining appears to be relatively old because of its weathered characteristics. Because of the unknown source for this stained area, this area is considered an area of concern, and is labeled AOC-10 on Figure 3a.

Soil and Vegetation Staining East and Adjacent to Maintenance Shop (Area 16):
The source of the stained soil and vegetation adjacent to and east of the maintenance shop is unknown. It is speculated that waste oil has been poured along the foundation of the building for weed control. The southern extent of the staining may encroach the radiological Deposit C, but radiological surveys were not performed at the time of the May 1995 site walk-through to confirm the exact location of the staining in relation to the radiological contamination. Based on the uncertain nature of the staining, this area is considered an area of concern, and is labeled AOC-11 on Figure 3a.

Soil Staining at the Southeast Corner of Maintenance Shop (Area 17):
The approximate 100-square-foot area of very black and heavy oil-saturated soil at the southeast corner of the maintenance shop shows visual indications of potential hazardous substances being released to the environment. PID field-screening conducted in the oil-saturated soil indicated volatile organics of 1 ppm. PCB field-screening tests performed (at predetermined concentrations of 5 and 50 ppm for Arochlor 1248) in the area indicated no PCB concentrations greater than 5 or 50 ppm, as shown in Table 1. Arochlor 1248 is one of the more common Arochlors, and provides a sensitivity of 1 ppm. The stained area may be associated with radiologic Deposit C, but radiological surveys were not performed at the time of the site walk-through to confirm the exact location of the staining in relation to the radiological contamination. Based on the characteristics of the staining, this area is considered an area of concern and is labeled AOC-12 on Figure 3a.

Soil Staining at the Southwest Corner of Maintenance Shop (Area 18):
The approximate 200-square-foot area of very black oil-saturated soil at the southwest corner of the maintenance shop shows visual indications of potential hazardous substances being released to the environment. PID field-screening conducted in the area indicated volatile organics of 1 ppm. Based on this information, this area is considered an area of concern, and is labeled AOC-13 on Figure 3a.

Soil Staining Southwest of Maintenance Shop (Area 19):
The approximate 300-square-foot area of slightly oil-stained soil southwest of the maintenance shop indicates that potential hazardous substances have been released to the environment. The staining in this area is representative of other numerous stained areas in the area. The area is only slightly stained, but because the area is quite extensive, this area is considered an area of concern, and is labeled AOC-14 on Figure 3a.

Soil Staining West of Maintenance Shop (Area 20):
The approximate 50-square-foot area of slightly stained soil west and adjacent to the storage trailer indicates potential hazardous substances have been released to the environment. Based on this information, and the unknown source for this stained area, this area is considered an area of concern and is labeled AOC-15 on Figure 3a.

Soil Staining Located Between Maintenance Shop and Storage Trailer (Area 21):
The soil staining located between the maintenance shop and the storage trailer, associated with five 55-gallon drums and four 5-gallon metal cans shows visual indications of potential hazardous substances being released to the environment. The contents of the containers is unknown. Based on this information, this area is considered an area of concern and is labeled AOC-16 on Figure 3a.

Soil Staining Associated with Old Pickup Truck (Area 22):
The approximate 10-square-foot area of very black oil stained soil associated with the old pickup truck shows indications of suspect hazardous substances being released to the environment. The soil staining in this area is very black in color, indicating that it may have resulted from waste automotive oil spilling on the ground during vehicle dismantling. Based

on this information, this area is considered an area of concern, and is labeled AOC-17 on Figure 3a.

Stained Soil Area South of Maintenance Shop (Area 23):
The two areas of stained soil located approximately 100 feet south of the maintenance shop show visual indications of a release of potential hazardous substances to the environment. It is unclear what the source of the stains is, but it is speculated that vehicles or equipment leaked engine or transmission fluids in the area. Based on this information, this area is considered an area of concern, and is identified as AOC-18 on Figure 3a.

Stained Soil Area Associated with Late-Model Pickup Truck (Area 24):
The very black stained soil area associated with the late-model pickup truck shows indications of potential hazardous substances being released to the environment. The very black color of the staining suggests that well-used motor oil spilled onto the soil in this area. Based on this information, this area is considered an area of concern and is labeled AOC-19 on Figure 3a.

Stained Soil Associated with Numerous Overturned 55-Gallon Drums (Area 25):
The area of the seven 55-gallon drums and thirteen 5-gallon metal cans is located on the edge of the embankment above the drainage that leads to the pond. Many of the drums and containers contain liquids, and several are leaking. The soil is heavily saturated in this area, and PID field-screening results indicated volatile organics of 1 ppm. The contents of the containers is unknown, but is presumed to be an oily petroleum product. Based on this information, this area is considered an area of concern, and is labeled AOC-20 on Figure 3a.

Stained Soil Associated with Pallets of 5-Gallon Containers (Area 26):
The green discolored soil and yellow-colored crystal growth adjacent to the pallets of 5-gallon containers shows visual indications of potential hazardous substances being released to the environment. The contents of the 5-gallon containers is unknown. Based on this information, this area is considered an area of concern, and is labeled AOC-21 on Figure 3a.

Broken Lead-Acid Batteries (Area 27):
There are no visual indications that the contents of the 3 lead-acid batteries have leaked onto the soil. Based on this information, this area is not considered an area of concern.

Soil Staining in Embankment (Area 28):
The source of the oil-stained soil running down the embankment, off the southeast corner of the paint storage shed, is uncertain. It appears that it either resulted in oil being dumped off the embankment, or that it is being released from the embankment from a source upgradient. Because the source of the staining is uncertain, and potential hazardous substances have been released to the environment, this area is considered an area of concern, and is labeled AOC-22 on Figure 3a.

Pond (Area 29):
There are no visual indications of improper disposal of suspect hazardous substances in and around the pond. However, because the pond is down-gradient of the Maintenance Shop Area, and visual indications of potential hazardous substances have been released to the environment directly upgradient of the drainage that leads to the pond, this area is considered an area of concern, and is labeled AOC-23 on Figure 3a.

Paint Storage Shed (Area 30):
No visual indications of improper disposal of suspect hazardous substances are evident in the paint storage shed. Based on this information, this area is not considered an area of concern.

Boneyard Area:

Greenish-Gray Stained Soil (Area 31):
The area of greenish-gray stained soil is associated with radiological Deposit W. It is presumed to be the area that the uranium ore was stockpiled in the past. Visual inspection of the stained soil in this area also indicate the potential for copper-rich mineralization on various areas in the stained-soil area, suggesting that this may also be the location where the copper, gold, and silver ore was stockpiled in the past. Based on this information, this area is considered an area of concern, and is labeled AOC-24 on Figure 3b.

Pile of Unbroken Batteries (Area 32):
There are no visual indications that the batteries that were stored in this area have leaked their liquid contents into the soil. Based on this information, this area is not considered an area of concern.

Trash Pit (Area 33):
During the initial site walk-throughs on the property, disposal of various empty 5-gallon buckets, paint and oil cans, and some household debris was evident in the trash pit. During the site walk-through conducted in May 1995, visual inspection of the trash pit revealed that the pit had been filled with soil and large rocks. It could not be determined if the trash contained in the trash pit had been removed prior to the pit being filled, or whether the pit was filled without removal of the trash. Consistent with the disposal practices on the property, and trash present on the new soil surface, it is believed the trash pit was covered without removing the trash. Based on this information, this area is considered an area of concern, and this area is labeled AOC-25 on Figure 3b.

Stained Soil Associated with Twenty-Eight 55-Gallon Drums (Area 34):
Twenty 55-gallon drums were found to be stored in this area during initial site walk-throughs. Twenty-eight 55-gallon drums were found in the area during the May 1995 site walk-through. Several of the drums are leaking an oil-like liquid with the consistency and color of waste oil, releasing potential hazardous substances to the environment. This information suggests that this area continues to be used as a drum storage area for full or empty drums, without regard to the drum integrity. Based on this information, this area is considered an area of concern, and is labeled AOC-26 on Figure 3b.

Stained Soil Associated with Yellow Articulated Loader (Area 35):
The stained soil under the engine/transmission section of the articulated loader is presumed to be engine/transmission fluids that resulted during removal of the engine. The stained soil located at the front end of the loader is presumed to be hydraulic fluid. Based on this information, these areas are considered an area of concern, and are labeled AOC-27 on Figure 3b.

Stained Soil Associated with Water Truck (Area 36):
It appears that the soil staining located under the water truck resulted from engine/transmission fluid draining onto the ground during the removal of the truck engine. Based on this information, this area is considered an area of concern, and is labeled AOC-28 on Figure 3b.

Large Tank (Area 37):
There are no indications that the large tank has leaked into the surrounding soil. It is unclear what the tank contains, but it is presumed to be rain water. The tank appears to have been placed into the boneyard area for storage. Based on this information, the tank, and the soil area surrounding the tank, is not considered an area of concern.

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5.0 CONCLUSIONS AND RECOMMENDATIONS

On the basis of the information presented in Sections 3.0 and 4.0, it is concluded that several of the potential areas of concern do not warrant further attention. The following areas (as presented in Figures 2a and 2b) are believed to be free from contamination of hazardous substances:

Office Building Area
- Used Tire Storage Area (Area 3).
- Un-Erected Batch Plant (Area 4).

Maintenance Shop Area
- Pile of Gypsum and Broken Battery (Area 8).
- Discarded Brake Pads (Area 12).
- Stained Soil North of Paint Storage Shed (Area 14).
- Broken Lead-Acid Batteries (Area 27).
- Paint Storage Shed (Area 30).

Boneyard Area
- Pile of Unbroken Batteries (Area 32).
- Large Tank (Area 37).

Hazardous substance characterization is not recommended for the areas identified above. If during remediation, suspect hazardous substance areas are encountered, procedures outlined in the *Monticello Remedial Action Project, Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995) will be implemented.

Recommended follow-up actions are prescribed for the following areas that were determined to be areas of concern in Section 4.0. The location of each area of concern is shown on Figures 3a and 3b, and are identified as AOC-XX.

Office Building Area
- Above-Ground Petroleum Storage Tanks (AOC-01)
- Large Shed (AOC-02)
- Stained Soil (AOC-03)

Maintenance Shop Area
- Stained Soil Northwest and Adjacent to Maintenance Shop (AOC-04)
- Stained Soil Northeast and Adjacent to Maintenance Shop (AOC-05)
- Oil Stained Soil Associated with a 55-Gallon Drum on Storage Rack (AOC-06)
- Oil-Stained Soil Associated with 55-Gallon Drum in Gravel Area (AOC-07)
- Stained Soil Associated with Suspect Diesel Fuel (AOC-08)
- Stained Soil Associated with Drums (AOC-09)
- Stained Soil West of the Paint Storage Shed (AOC-10)
- Soil and Vegetation Staining East and Adjacent to Maintenance Shop (AOC-11)

- Soil Staining at the Southeast Corner of Maintenance Shop (AOC-12)
- Soil Staining at the Southwest Corner of Maintenance Shop (AOC-13)
- Soil Staining Southwest of Maintenance Shop (AOC-14)
- Soil Staining West of Maintenance Shop (AOC-15)
- Soil Staining Located Between Maintenance Shop and Storage Trailer (AOC-16)
- Soil Staining Associated with Old Pickup Truck (AOC-17)
- Stained Soil Area South of Maintenance Shop (AOC-18)
- Stained Soil Area Associated with Late-Model Pickup Truck (AOC-19)
- Stained Soil Associated with Numerous Overturned 55-Gallon Drums (AOC-20)
- Stained Soil Associated with Pallets of 5-Gallon Containers (AOC-21)
- Soil Staining in Embankment (AOC-22)
- Pond (AOC-23)

Boneyard Area

- Greenish-Gray Stained Soil (AOC-24)
- Trash Pit (AOC-25)
- Stained Soil Associated with Twenty-Eight 55-Gallon Drums (AOC-26)
- Stained Soil Associated with Yellow Articulated Loader (AOC-27)
- Stained Soil Associated with Water Truck (AOC-28)

Provided below is a description and the rational used for the determination made for each area of concern:

Above-Ground Petroleum Storage Tanks (AOC-01):
The soil surrounding the above-ground petroleum tanks shows obvious stains from spilling and leaking during fueling vehicles and equipment. The volume of petroleum released or the quantity of soil staining at-depth is unknown. The potential exists for hazardous substances, presumed to be petroleum products, to be present in the soils on the east side of the tanks. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Large Shed (AOC-02):
The contents of the broken bags is unknown. The source of the crystalline growth is presumed to have originated from the bag contents. Based on the lack of specific information as to the contents of the bags, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil (AOC-03):
It is speculated that this oil stained area is the result of fluids draining from vehicles during maintenance. There is, however, little known about the source of the staining. Based on the lack on information regarding this oil-stained area, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Northwest and Adjacent to Maintenance Shop (AOC-04):
The soil staining in this area shows visual indications of significant quantities of what appears to be waste oil. Waste oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Northeast and Adjacent to Maintenance Shop (AOC-05):
The soil staining and pooled oil on the surface of the soil indicates a potential release of hazardous substances in this area. The soil staining appears to have resulted from waste oil being discarded in this area. Waste oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Oil Stained Soil Associated with a 55-Gallon Drum on Storage Rack (AOC-06):
The contents of this drum is suspected to be some type of petroleum product. The color and characteristics of the staining indicate that it may have resulted from unused oil leaking from the drum. The depth of the staining is not known; however, the surface staining is heavy. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Oil-Stained Soil Associated with 55-Gallon Drum in Gravel Area (AOC-07):
The stained soil in this area is presumed to result from petroleum product leaking from the overturned 55-gallon drum. The color and characteristics of the staining suggest that the drum may contain waste oil. Waste oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow

the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

The following description is for the area south of the maintenance shop.

Stained Soil Associated with Suspect Diesel Fuel (AOC-08):
The soil area surrounding the discarded piece of equipment is heavily stained. The stained area is located on the edge of the embankment, above the drainage that leads to the pond. It is speculated that the staining is a result of diesel fuel leaking out of the equipment. Diesel fuel may contain hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Associated with Drums (AOC-09):
The soil staining appears to be the result of waste oil being discarded into leaking drums, and spilling on the surface. Waste oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil West of the Paint Storage Shed (AOC-10):
The source of this stained soil area is unknown. Based on the lack of information regarding this soil staining, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Soil and Vegetation Staining East and Adjacent to Maintenance Shop (AOC-11):
The source of the stained soil and vegetation adjacent to and east of the maintenance shop is unknown. It is speculated that the staining resulted from waste oil being poured onto vegetation for weed control purposes. The area is very close in proximity to radiological Deposit C. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Soil Staining at the Southeast Corner of Maintenance Shop (AOC-12):
PCB field-screening conducted in this area indicated no concentrations of PCBs exceeding pre-established concentrations of 5 and 50 ppm. However, the very black and heavy nature

of this oil-saturated soil suggests significant volumes of potential hazardous substances have been disposed in this area. The color and the characteristics of the soil staining suggest that it is a result of waste oil spilling onto the ground in this area. Waste oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Soil Staining at the Southwest Corner of Maintenance Shop (AOC-13):
The very black nature of this oil-saturated soil suggests that waste oil has been spilled and leaked into the soil in this area. Waste oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Soil Staining Southwest of Maintenance Shop (AOC-14):
This area of slightly oil-stained soil is quite extensive, and indicates a release of potential hazardous substances to the environment. Consistent with the close proximity to the maintenance shop, it is speculated that this soil staining resulted from parked vehicles leaking engine/transmission fluids during maintenance. Engine/transmission fluids may contain high concentrations of hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Soil Staining West of Maintenance Shop (AOC-15):
The area of slightly stained soil indicates potential hazardous substances have been released to the environment. The source of the staining is unclear. Based on the lack of information regarding this stained area, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Soil Staining Located Between Maintenance Shop and Storage Trailer (AOC-16):
The contents of the drums and containers from which this saturated soil originated is unknown, but is presumed to be petroleum product. Based on the lack of information regarding this soil staining, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the

Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties (DOE 1995).

Soil Staining Associated with Old Pickup Truck (AOC-17):
The nature of the stained soil in this area, and its association with the suspected dismantling of the old pickup truck, suggests that the staining is a result of used oil draining from the truck engine/transmission. Engine/transmission fluids have the potential to contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Area South of Maintenance Shop (AOC-18):
The two areas of stained soil located approximately 100 feet south of the maintenance shop show visual indications of a release of potential hazardous substances to the environment. The exact source of the staining is unknown. Based on the lack of information regarding this stained area, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Area Associated with Late-Model Pickup Truck (AOC-19):
The stained soil in this area appears to have originated from used engine oil (the engine is stored in the bed of the pickup truck) draining onto the ground. Used engine oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Associated with Numerous Overturned 55-Gallon Drums (AOC-20):
The oil-saturated soil in this area is on the embankment of the drainage that leads to the pond. The contents of the drums and containers is unknown, which contain liquids and were leaking during the May 1995 site walk-through. The contents of the drums is presumed to be petroleum product. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Associated with Pallets of 5-Gallon Containers (AOC-21):
The source of the green discolored soil and the yellow-colored crystal growth is presumed to have originated from the 5-gallon containers. The contents of the containers is unknown.

Based on the lack of information regarding the contents of the containers, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Soil Staining in Embankment (AOC-22):
The source of the oil-stained soil running down the embankment is unknown. The area does not appear to be heavily stained. Based on the lack of information regarding this stained area, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Pond (AOC-23):
There are no visual indications of improper disposal of suspect hazardous substances in and around the pond. The pond is down-gradient of the Maintenance Shop Area, and visual indications of potential hazardous substances have been released to the environment directly upgradient of the drainage that leads to the pond. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Boneyard Area:

Greenish-Gray Stained Soil (AOC-24):
The green-colored staining associated with this area may indicate copper-rich mineralization. Other heavy metals may also be associated with the area. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Trash Pit (AOC-25):
Evidence suggests that the trash pit was covered over, without excavating and properly disposing of the trash. Numerous items identified in previous site walk-throughs may have released hazardous substances to the environment. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Associated with Twenty-Eight 55-Gallon Drums (AOC-26):
This area of oil-saturated soil shows visual indications of a release of potential hazardous substances to the environment. The liquid contained in the drums and the stained area appears to be the result of waste oil. Waste oil may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that this area be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Associated with Yellow Articulated Loader (AOC-27):
The stained soil that resulted from the dismantling of the engine/transmission section of the articulated loader is presumed to be engine/transmission fluids, which potentially contain high concentrations of metals and other hazardous substances. The stained soil associated with the front end of the loader is presumed to be hydraulic fluid, which may contain hazardous substances. Based on this information, it is recommended that these areas be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

Stained Soil Associated with Water Truck (AOC-28):
It is presumed that the soil staining located under the water truck resulted from engine/transmission fluid draining onto the ground during the removal of the truck engine. Engine/transmission fluids may contain high concentrations of metals and other hazardous substances. Based on this information, it is recommended that these areas be characterized to determine if hazardous substances have been released to the environment in concentrations exceeding risk-based cleanup standards. Characterization activities will follow the process described in the *Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties* (DOE 1995).

6.0 REFERENCES

American Society for Testing and Materials, 1993. *Standard Practice for Environmental Site Assessments: Transaction Screen Process*, Procedure E 1528-93, Philadelphia, Pennsylvania.

U.S. Department of Energy, 1990. *Final Remedial Investigation/Feasibility Study-Environmental Assessment for the Monticello, Utah, Uranium Mill Tailings Site*, Volumes I and II, DOE/EA-0424, prepared by UNC Geotech for the U.S. Department of Energy, Grand Junction Projects Office, Grand Junction, Colorado.

_____, 1995. *Monticello Remedial Action Project, Special Waste Management Plan for the Monticello Mill Tailings Site and Vicinity Properties*, P-GJPO-913, prepared by Rust Geotech for the U.S. Department of Energy, Grand Junction Projects Office, Grand Junction, Colorado.

Rust Geotech, 1992 (continually updated). *Environmental Procedures Catalog* (Manual 116), U.S. Department of Energy, Grand Junction Projects Office, Grand Junction, Colorado.

Table 1. Summary of Field Screening and Potential Areas of Concern.

Potential Area of Concern	Field Screening Location Number[a]	Type of Field Screening Performed	Field Screening Results	Area of Concern Identification[f]	Justification for Area of Concern Selection[g]
Above-Ground Petroleum Tanks (Area 1)	NA[b]	NA[b]	NA[b]	AOC-01	Stained Soil
Large Shed (Area 2)	NA	NA	NA	AOC-02	White Crystalline Material
Used tire Storage Area (Area 3)	NA	NA	NA	NA	No Field Recognition Criteria
Un-Erected Batch Plant (Area 4)	NA	NA	NA	NA	No Field Recognition Criteria
Stained Soil (Area 5)	NA	NA	NA	AOC-03	Stained Soil
Stained Soil Northwest and Adjacent to Maintenance Shop (Area 6)	Area 6	PID[e]	2 ppm	AOC-04	Stained Soil
Stained Soil Northeast and Adjacent to Maintenance Shop (Area 7)	Area 7	PID	2 ppm	AOC-05	Stained Soil
Pile of Gypsum and Broken Battery (Area 8)	Area 8	PID	0 ppm	NA	No Field Recognition Criteria
Oil-Stained Soil Associated with 55-gallon Drum on Storage Rack (Area 9)	NA	NA	NA	AOC-06	Stained soil
Oil-Stained Soil Associated with 55-Gallon Drum in Gravel Area (Area 10)	NA	NA	NA	AOC-07	Stained Soil
Stained Soil Associated with Suspect Diesel Fuel (Area 11)	NA	NA	NA	AOC-08	Stained Soil
Discarded Brake Pads (Area 12)	NA	NA	NA	NA	No Evidence of Degradation
Stained Soil Associated with Drums (Area 13)	NA	NA	NA	AOC-09	Stained Soil
Stained Soil North of Paint Storage Shed (Area 14)	NA	NA	NA	NA	Minor Oil-Stained Soil

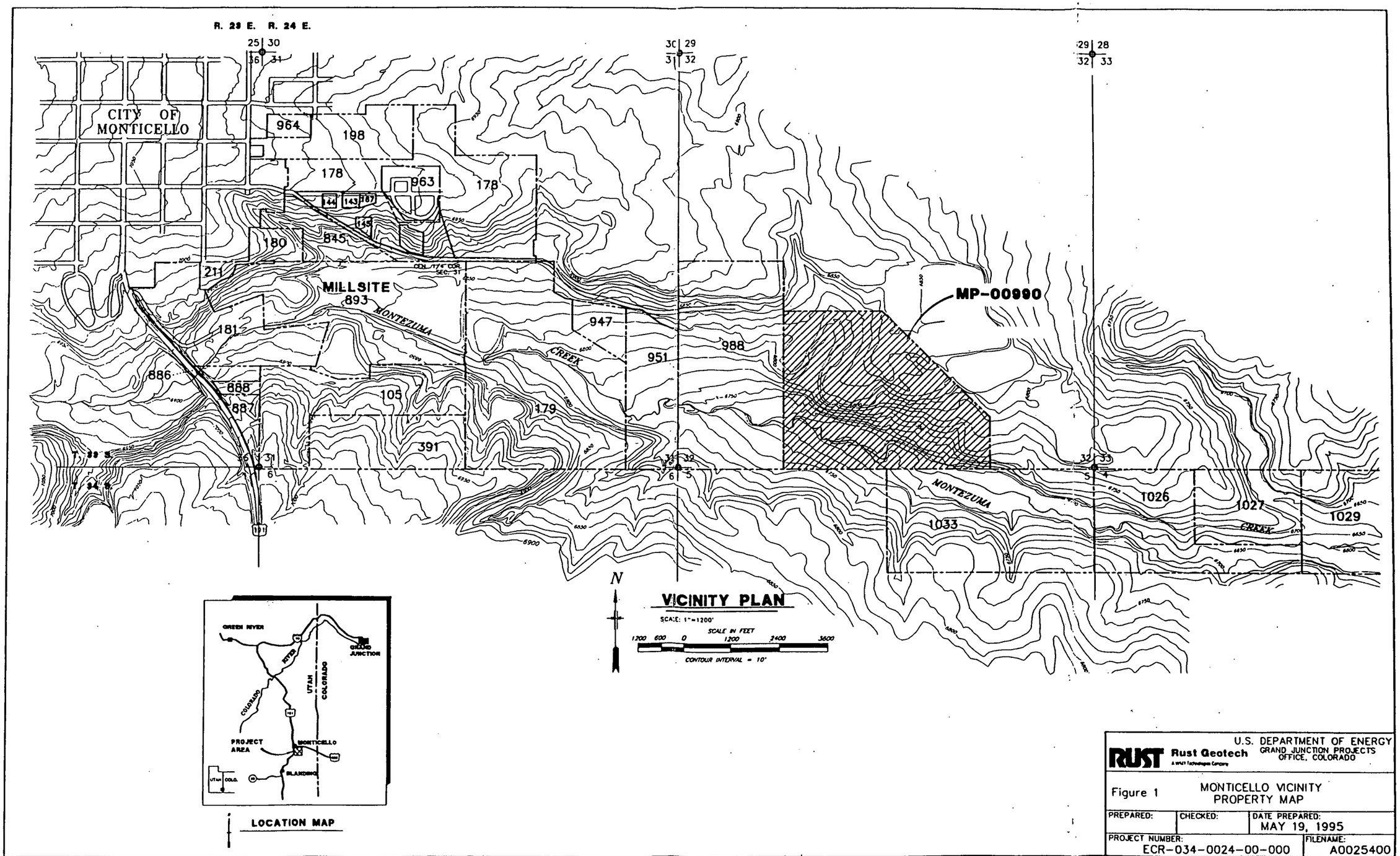
Table 1. Summary of Field Screening and Potential Areas of Concern. *(continued)*

Potential Area of Concern	Field Screening Location Number[a]	Type of Field Screening Performed	Field Screening Results	Area of Concern Identification[f]	Justification for Area of Concern Selection[g]
Stained Soil West of the Paint Storage Shed (Area 15)	Area 15	PID	1 ppm	AOC-10	Stained Soil
Soil and Vegetation Staining East and Adjacent to Maintenance Shop (Area 16)	NA	NA	NA	AOC-11	Stained Soil
Soil Staining at the Southeast Corner of Maintenance Shop (Area 17)	Area 17	PID	1 ppm	AOC-12	Stained Soil
		PCB[d]	ND[e]		
Soil Staining at the Southwest Corner of Maintenance Shop (Area 18)	Area 18	PID	1 ppm	AOC-13	Stained Soil
Soil Staining Southwest of Maintenance Shop (Area 19)	NA	NA	NA	AOC-14	Stained Soil
Soil Staining West of Maintenance Shop (Area 20)	NA	NA	NA	AOC-15	Stained Soil
Soil Staining Located Between Maintenance Shop and Storage Trailer (Area 21)	NA	NA	NA	AOC-16	Stained Soil
Soil Staining Associated with Old Pickup Truck (Area 22)	NA	NA	NA	AOC-17	Stained Soil
Stained Soil Area South of Maintenance Shop (Area 23)	NA	NA	NA	AOC-18	Stained Soil
Stained Soil Area Associated with Late-Model Pickup Truck (Area 24)	NA	NA	NA	AOC-19	Stained Soil
Stained Soil Associated with Numerous Overturned 55-Gallon Drums (Area 25)	Area 25	PID	1 ppm	AOC-20	Stained Soil

Table 1. Summary of Field Screening and Potential Areas of Concern. *(continued)*

Potential Area of Concern	Field Screening Location Number[a]	Type of Field Screening Performed	Field Screening Results	Area of Concern Identification[f]	Justification for Area of Concern Selection[g]
Stained Soil Associated with Pallets of 5-Gallon Containers (Area 26)	Area 26	PID	0 ppm	AOC-21	Discolored Soil
Broken Lead-Acid Batteries (Area 27)	NA	NA	NA	NA	No Field Recognition Criteria
Soil Staining in Embankment (Area 28)	NA	NA	NA	AOC-22	Stained Soil
Pond (Area 29)	NA	NA	NA	AOC-23	Down-gradient of Maintenance Shop Area
Paint Storage Shed (Area 30)	NA	NA	NA	NA	No Field Recognition Criteria
Greenish-Gray Stained Soil (Area 31)	Area 31	PID	0 ppm	AOC-24	Discolored Soil
Pile of Unbroken Batteries (Area 32)	NA	NA	NA	NA	No Field Recognition Criteria
Trash Pit (Area 33)	10	PID	0 ppm	AOC-25	Disposal of Suspect Containers
Stained Soil Associated with Twenty-Eight 55-Gallon Drums (Area 34)	Area 34	PID	0 ppm	AOC-26	Stained Soil
Stained Soil Associated with Yellow Articulated Loader (Area 35)	NA	NA	NA	AOC-27	Stained Soil
Stained Soil Associated with Water Truck (Area 36)	NA	NA	NA	AOC-28	Stained Soil
Large Tank (Area 37)	NA	NA	NA	NA	No Field Recognition Criteria

[a] Field-Screening Location Numbers correspond to locations identified on Figures 2a and 2b.
[b] "NA" indicates that field screening was not conducted in this area.
[c] PID measurements are for organic vapors.
[d] "PCB" indicates that field screening was conducted using PCB immunoassay technology at predetermined concentrations of 5 ppm and 50 ppm for Arochlor 1248. Results are reported as qualitative above or below the predetermined concentrations.
[e] "ND" indicates Not Detected.
[f] "Area of Concern Identification" indicates areas that are identified as areas of concern, and the identifying number for reference to Figures 3a and 3b. "NA" indicates that the area is not considered an area of concern.
[g] "Justification for Area of Concern Selection" summarizes the rationale used to select a potential area of concern as an area of concern.



RUST Rust Geotech — A WMX Technologies Company

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

Figure 1 — MONTICELLO VICINITY PROPERTY MAP

PREPARED:	CHECKED:	DATE PREPARED: MAY 19, 1995
PROJECT NUMBER: ECR-034-0024-00-000		FILENAME: A0025400

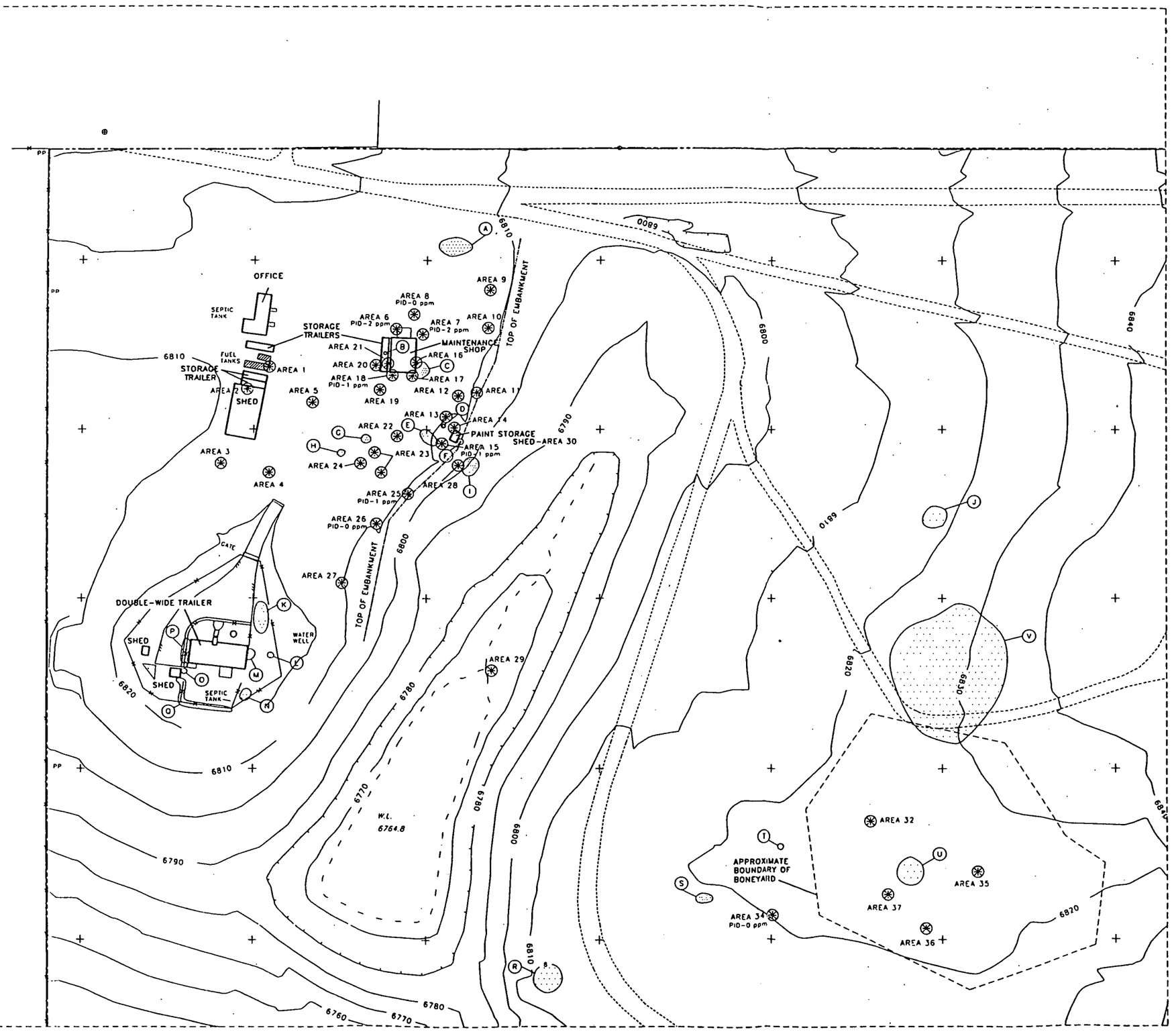
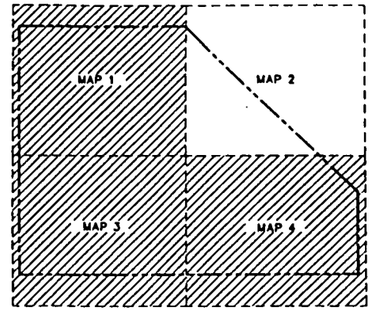


FIGURE 2a
LOCATIONS OF POTENTIAL AREAS OF CONCERN

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

CLAY HILL DRIVE
MONTICELLO, UTAH
(PARCEL #33S24E324800)

Rust Geotech
DOE ID NO. MP-00990-CS
DWG. NO. 3-000990-01



NORTH

SCALE IN FEET
60 30 0 60 120

A — DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT

RADIOLOGICALLY CONTAMINATED AREA

APPROXIMATE BOUNDARY OF BONEYARD

APPROXIMATE LOCATION OF EMBANKMENT ABOVE DRAINAGE

AREA 2 — POTENTIAL AREAS OF CONCERN

PID-0 ppm — LOCATION WHERE PID FIELD SCREENING WAS CONDUCTED, WITH THE ASSOCIATED PID READING (REFER TO TABLE 1)

FIGURE 2b
LOCATIONS OF POTENTIAL AREAS OF CONCERN

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.	NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

RESIDENCE-NO OF OCCUPANTS
NCA-RESIDENCE-BAM-MRS /PID
INSTRUMENT NO | SURVEYOR
SURVEY DATE | TIME
VERIFICATION | DATE

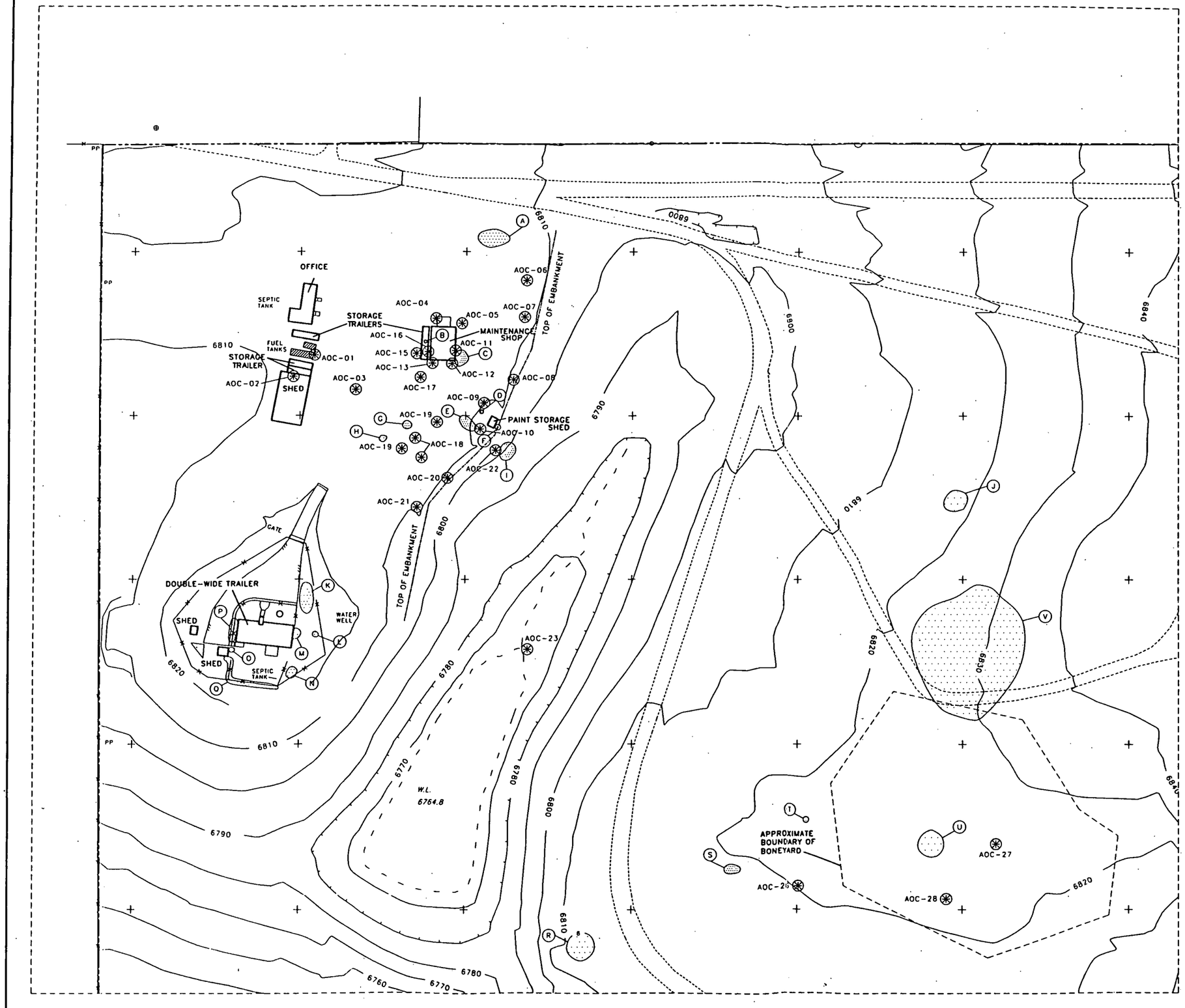
U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

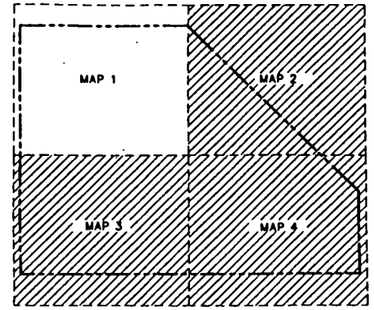
DESIGNED: | DATE
DRAWN
CHECKED:
PROJ ENGR.
SUBMITTED:

CLAY HILL DRIVE
MONTICELLO, UTAH
(PARCEL #33S24E324800)

APPROVAL | DATE | APPROVAL DOE | DATE

Rust Geotech
DOE ID NO. MP-00990-CS
DWG. NO. 3-000990-D2 SHT. 2 OF 4





NORTH

SCALE IN FEET
60 30 0 60 120

LEGEND

- (A) DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
- RADIOLOGICALLY CONTAMINATED AREA
- APPROXIMATE BOUNDARY OF BONEYARD
- APPROXIMATE LOCATION OF EMBANKMENT ABOVE DRAINAGE
- AOC-02 AREAS OF CONCERN AND AREA DESIGNATION

FIGURE 3a
LOCATIONS OF AREAS OF CONCERN

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

RESIDENCE - NO OF OCCUPANTS
NON-RESIDENCE - MAN-HRS / DAY
INSTRUMENT NO | SURVEYOR
SURVEY DATE | TIME
VERIFICATION | DATE

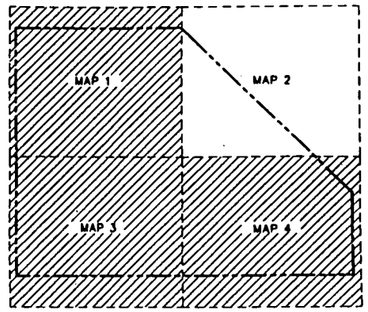
U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

DESIGNED | DATE
DRAWN
CHECKED
PROJ. ENGR.
SUBMITTED
APPROVAL | DATE | APPROVAL DOE | DATE

CLAY HILL DRIVE
MONTICELLO, UTAH
(PARCEL #33S24E324800)

Rust Geotech

DOE ID NO. MP-00990-CS
DWG NO. 3-000990-D3 SHT. 3 OF 4



NORTH

SCALE IN FEET
60 30 0 60 120

LEGEND

- (A) DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
- RADIOLOGICALLY CONTAMINATED AREA
- APPROXIMATE BOUNDARY OF BONEYARD
- APPROXIMATE LOCATION OF EMBANKMENT ABOVE DRAINAGE
- AOC-02 AREAS OF CONCERN AND AREA DESIGNATION

FIGURE 3b
LOCATIONS OF AREAS OF CONCERN

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

RESIDENCE-NO. OF OCCUPANTS
NON-RESIDENCE-MAN-HRS /DAY

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

INSTRUMENT NO. | SURVEYOR
SURVEY DATE | TIME
VERIFICATION | DATE

DESIGNED | DATE
DRAWN
CHECKED
PROJ. ENGR.
SUBMITTED

CLAY HILL DRIVE
MONTICELLO, UTAH
(PARCEL #33S24E324800)

APPROVAL | DATE | APPROVAL DOE | DATE

RUST Rust Geotech

DOE ID NO. MP-00990-CS
DWG NO. 3-000990-04 SHT. 4 OF 4

Attachment 1

Title Search Summary

Geotech ID Number: MP-00990-VL
Property Number: 33S24E324800
Property Address: 1332 East Bar Cross Road
Owner: Sutherland Brothers, Inc.

Book/Page	Transferred From	Transferred To	Date
673-583-4	Sutherland Brothers Drilling	Sutherland Brothers, Inc.	12/27/85
646-82-3	Jim C. Butt, et ux.	Sutherland Brothers Drilling	2/3/83
636-807	Jim C. Butt, et ux.	H.D. Butt[1]	5/1/80
566-762	Sheral Hollingsworth, et ux.[2]	Jim C. Butt, et ux.	8/31/76
566-761	Max Dalton	Sheral Hollingsworth, et ux.[3]	2/4/72

[1]No documentation found for the transfer from H.D. Butt back to Jim C. Butt, et ux., prior to the sale to Sutherlands.

[2]Subdivided larger plot.

[3]Subdivided larger plot.

There were numerous lis pendens filed against this property between 1980 and 1983.

Attachment 2

Site Assessment Checklist

SITE ASSESSMENT CHECKLIST

DOE ID Number/Property Name MP-00990-VL / Sutherland Brothers, Inc.

Owner Name(s) Bob and Lee Sutherland Date Purchased Feb. 1963

Previous Owner(s) Jim Butt, H. D. Butt Date Purchased May 1960
Sheral Hollingsworth 8/76 Max Dalton 2/72

Site Walk-Through Checklist

✓ 1. Inspect radiologically contaminated areas, noting suspect areas/sources of hazardous waste (reconfirmation of radiologic contamination areas may be appropriate)

✓ 2. Inspect the remainder of the property with emphasis on:
   a. Drums, containers or sacks of chemicals (record size, condition, labels)
   b. Stains soil (record size for areas, color, relative staining, probable source)
   c. French drains, open drains, trenches, pits, ponds, or lagoons
   d. Equipment and salvage stockpiles for condition and leakage
   e. Dead or stressed vegetation
   f. Pesticides, paints or other chemicals in individual containers of greater than 5 gal. in volume or 50 gal. in the aggregate
   g. Above ground storage tanks or vent pipes, fill pipes, access ways indicating a fill pipe protruding from the ground or adjacent to any structure located on the property indicating the possible presence of an underground tank
   h. Transformer, capacitor or any hydraulic equipment
   i. Unidentified waste material, tires, automotive or industrial batteries (dumped, buried or burned)
   j. Friable asbestos materials improperly discarded or stored (e.g., pipe, duct, and boiler coverings; insulation, floor tiles, siding, roofing materials; fire-proofing from walls and ceilings; duct linings; heat reflectors)
   k. Chemical odors emanating from the septic system (tank area or leach field)
   l. Cut and fill areas or areas of subsidence

✓ 3. Field Screening
   a. PID readings (readings/locations) nothing over 2ppm on oily substances in various locations around shop area and bone yard
   b. PCB test sample location(s)/results None taken for lab - ran one field sample Aroclor 1248 - no detection

✓ 4. Does anyone reside on the property or adjacent to it? (Yes or No)

✓ 5. Is the property suitable for habitation? (Yes or No)

✓ 6. Document observations with photos and/or videocamera.

✓ 7. Identify potentially sensitive environmental receptors (e.g., surface waters, wetlands, water supplies, food supplies)

✓ 8. Additional Samples Collected (location[s] and analysis[es] requested)
(PCB field sample collected 17 ft. south of southeast corner of shop.)

8/94

11-17-93

Site Walk-Through Notes DOE ID Number MP-00990-VL Date 9-28-94

1) Found several oily "spots" in radioactive contaminated areas

2) a. Several drums around shop area, office area in shed, and the boneyard
sacks of Envirosplug drilling grout in shop - 40 - 50lb bags

b. Many oily stained areas, especially around shop - the worst area is directly north and adjacent to the shop. Oily substance was pooled in ground and Hnu reading of 1 ppm for volatile organics. 10ft wide by 14ft long by 6ft high pile of gypsum west of shop area. Broken battery near this pile. Battery near front of shop also. Batteries stockpiled in boneyard on first assessment but missing on second assessment.
Oily substance pooled in ground in front of shop near drums containing or marked w/ Hydraulic Oil AW ISO 68 Chevron - Mellerstrauss Oil Co., 2450 Wall Ave., Ogden, Utah 84401 phone 392-9516 also marked on drum was High and Low pressure Hydraulic system oil. Carburetor cleaner, miscellaneous shop oils and compressed gasses in shop.
2 leaking drums near small metal sided shed that are marked 15 weight motor oil. Paint stored in shed. Many drums w/ leaking oily substances around them throughout the shop area.

c. One pit filled w/ paint cans, oil cans and miscellaneous household trash
One pond south east of shop w/ approximately a dozen old tires in it.
Sewage Lagoons - northeast of Sutherland property adjacent to their property one of these I am.

d. Boneyard is full of mostly scrap unuseable equipment. Lots of metal parts.

e. none noticed

f. paint in shed east east of shop building.

g See # 9 interview checklist

h. several old hydraulic equipment parts in shop area and boneyard.

i. see (b) above.

j. See # 6 interview checklist

k. none noticed

l. area adjacent to shop on east side and to the south

7. Possible contaminants down drainage to pond. - no oily sheen on pond. Cattle or stock do drink from pond.

8. None collected.

SITE ASSESSMENT CHECKLIST CONTINUED

Interview Checklist (Commence with explanation of purpose of interview)

Interviewee(s): (position, length of employment or ownership)

Ted Royer - accountant - three year employee
Wade Dalton - computer operator/payroll - five year employee

Owner or Representative Interview Checklist (Information provided to the best of their knowledge)

- ✓ 1. Property history and primary use (include information on activities prior to current ownership)
- ✓ 2. Disposal practices including current or previous presence of dry wells, french drains, open drains, trenches, pits, ponds or lagoons located on the property used in connection with waste treatment or waste disposal, or discharge of wastewater on or adjacent to the property other than storm water into a sanitary sewer system.
- ✓ 3. Source of suspect contamination (hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries; pesticides, paints, other chemicals or cleaning solutions in individual containers of greater than 5 gallons in volume or 50 gallons total.
- ✓ 4. Other potential waste streams (e.g., upgradient groundwater well used for disposal)
- ✓ 5. Current or former storage or use of the following: drums; transformers, capacitors, or hydraulic equipment; damaged or discarded automotive or industrial batteries; pesticides, paints, other chemicals or cleaning solutions in individual containers of greater than 5 gallons in volume or 50 gallons total.
- ✓ 6. Current or former disposal on site of asbestos-containing materials (e.g., pipe, duct and boiler coverings; insulation; floor tiles; siding; roofing materials; fire-proofing from walls and ceilings; duct linings; heat reflectors).
- ✓ 7. Current or previous presence and source of stained soil.
- ✓ 8. Fill dirt brought onto the property.
- ✓ 9. Current or previous presence of registered or unregistered storage tanks (above or underground), vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to or on the roof of any structure located on the property.
- ✓ 10. Presence and location of active or inactive septic tanks and leach fields, date or installation, and date of last clean-out.
- ✓ 11. Current or previous presence of any flooring, drains, or walls located within the facility that tar stained by substances other than water or are emitting foul odor.
- ✓ 12. If private well or non-public water system, contaminates identified in the well or system that exceed guidelines or where the well has been designated as contaminated by any government environmental/health agency.
- ✓ 13. Adjoining property currently or formally used for an industrial use (i.e., gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility).

8/94

Interview Notes DOE Number MP-00990-VL Date 9-28-94 11-17-93

1) property used for agriculture, livestock grazing, ore storage (gold/silver and uranium) maintenance of drill rigs and heavy equipment and storage of current and obsolete equipment

2) Waste oil stored in drums (from motorized equipment) that have leaked, two water wells on property, one leach field that services double wide trailer, 5-10 trailer spaces and office building. One pit with buckets, oil cans, household trash in it. One pond on property fed by small spring.

3) Many 55-gallon drums that have either leaked or have been ever filled with used/waste motor oil, hydraulic oil — mostly motor oils. Tires in pond batteries stored in boneyard and various places around shop area, yellow stain near drill fluid pallets, paint stored in shed near shop, drilling muds stored in shop - 40 → 50 lb bags. Various shop oils, carburetor cleaner and compressed gases stored in shop.

4) Various oil soaked ground around shop area

5) Hydraulic equipment, motors, transmissions, vehicles, scrap metal, drill rig parts in and around shop area and the boneyard — no transformers or capacitors 11 pallets of 5 gallon buckets of drill fluid (suspect) marked w/ C1660 Leitica Corporation, Oklahoma City, OK. Hydrotex drum leaked brown oily substance East of boneyard there is a flat area w/ greenish gray to brown stained soils 60 yards by 25 yards. Suspect Uranium ore was stockpiled here.

6) Some possible asbestos containing brake pads piled near shop area

7) Most oils seem to be used motor, hydraulic and cleaning fluids.

8) No fill dirt brought on to property.

9) One large useable propane tank stored south of shed which is south of the office building. Two tanks south of office building — south tank contains diesel and north tank contains nothing. No registered tanks.

10) Leach field is southwest of office building and provides service (see 2 above)

11) Various oil stains throughout the shop area caused by dumping waste oil or leaky drums (apparently)

12) One producing water well at double wide trailer - services whole site

13) Adjoining property is used for agricultural purposes except for several sewer lagoons to the northeast of which one of these leak.

SITE ASSESSMENT CHECKLIST CONTINUED

Interview Checklist (Commence with explanation of purpose of interview)

Interviewee(s): (position, length of employment or ownership)

Ted Royer 3 interviews conducted during previous Site Assessments.
Wade Dalton 3

Owner or Representative Interview Checklist (Information provided to the best of their knowledge)

- ✓ 1. Property history and primary use (include information on activities prior to current ownership)
- ✓ 2. Disposal practices including current or previous presence of dry wells, french drains, open drains, trenches, pits, ponds or lagoons located on the property used in connection with waste treatment or waste disposal, or discharge of wastewater on or adjacent to the property other than storm water into a sanitary sewer system.
- ✓ 3. Source of suspect contamination (hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries; pesticides, paints, other chemicals or cleaning solutions in individual containers of greater than 5 gallons in volume or 50 gallons total.
- ✓ 4. Other potential waste streams (e.g., upgradient groundwater well used for disposal)
- ✓ 5. Current or former storage or use of the following: drums; transformers, capacitors, or hydraulic equipment; damaged or discarded automotive or industrial batteries; pesticides, paints, other chemicals or cleaning solutions in individual containers of greater than 5 gallons in volume or 50 gallons total.
- ✓ 6. Current or former disposal on site of asbestos-containing materials (e.g., pipe, duct and boiler coverings; insulation; floor tiles; siding; roofing materials; fire-proofing from walls and ceilings; duct linings; heat reflectors).
- ✓ 7. Current or previous presence and source of stained soil.
- ✓ 8. Fill dirt brought onto the property.
- ✓ 9. Current or previous presence of registered or unregistered storage tanks (above or underground), vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to or on the roof of any structure located on the property.
- ✓ 10. Presence and location of active or inactive septic tanks and leach fields, date or installation, and date of last clean-out.
- ✓ 11. Current or previous presence of any flooring, drains, or walls located within the facility that tar stained by substances other than water or are emitting foul odor.
- ___ 12. If private well or non-public water system, contaminates identified in the well or system that exceed guidelines or where the well has been designated as contaminated by any government environmental/health agency.
- ✓ 13. Adjoining property currently or formally used for an industrial use (i.e., gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility).

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Interview Notes DOE Number MP-00990 Date May 1, 2, 1995

MR. Wade Dalton could not identify the contents of ~~white~~ 5/2/95
Bags in Large shed.

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SITE ASSESSMENT CHECKLIST

MAY 1995

DOE ID Number/Property Name MP-00990-CS / Sutherland Brothers, Inc.

Owner Name(s) Bob and Lee Sutherland/Sutherland Date Purchased Feb 83

Previous Owner(s) Jim Butt, H.D. Butt Date Purchased May 80

Site Walk-Through Checklist

✓ 1. Inspect radiologically contaminated areas, noting suspect areas/sources of hazardous waste (reconfirmation of radiologic contamination areas may be appropriate

✓ 2. Inspect the remainder of the property with emphasis on:
   a. Drums, containers or sacks of chemicals (record size, condition, labels)
   b. Stains soil (record size for areas, color, relative staining, probable source)
   c. French drains, open drains, trenches, pits, ponds, or lagoons
   d. Equipment and salvage stockpiles for condition and leakage
   e. Dead or stressed vegetation
   f. Pesticides, paints or other chemicals in individual containers of greater than 5 gal. in volume or 50 gal. in the aggregate
   g. Above ground storage tanks or vent pipes, fill pipes, access ways indicating a fill pipe protruding from the ground or adjacent to any structure located on the property indicating the possible presence of an underground tank
   h. Transformer, capacitor or any hydraulic equipment
   i. Unidentified waste material, tires, automotive or industrial batteries (dumped, buried or burned)
   j. Friable asbestos materials improperly discarded or stored (e.g., pipe, duct, and boiler coverings; insulation, floor tiles, siding, roofing materials; fire-proofing from walls and ceilings; duct linings; heat reflectors)
   k. Chemical odors emanating from the septic system (tank area or leach field)
   l. Cut and fill areas or areas of subsidence

✓ 3. Field Screening
   a. PID readings (readings/locations) PID field-screening not conducted during this Site Assessment
   b. PCB test sample location(s)/results PCB field Screening was not conducted during this site assessment

✓ 4. Does anyone reside on the property or adjacent to it? (Yes) or No) on property

✓ 5. Is the property suitable for habitation? (Yes) or No)

✓ 6. Document observations with photos and/or videocamera.

✓ 7. Identify potentially sensitive environmental receptors (e.g., surface waters, wetlands, water supplies, food supplies)

NA 8. Additional Samples Collected (location[s] and analysis[es] requested)

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Site Walk-Through Notes DOE ID Number MP-00990 Date May 1 & 2, 1995

Areas identified as potential Areas of Concern:

1) Above ground petroleum Storage tanks.
2) Large shed
3) Used tire storage Area
4) Un-erected Batch Plant.
5) Stained soil ≈ 60 feet east of Large shed
6) Stained soil NW of Maintenance Shop
7) Stained soil NE of Maint. Shop
8) Pile of Gypsum - No broken battery
9) NE of Maint. Shop - 55 gallon drum on Storage rack
10) Oil stained soil/gravel overturned 55-gal drum.
11) Saddle tanks - w/ Diesel fuel(?) heavy oil staining.
12) Discarded brake pads, no degradation.
13) Two leaking drums - waste oil(?) spills, leaks, SW of Maint. Shop
14) North of Paint storage Shed - 55 gal drum on rack, empty, slight staining
15) Slight staining west of Paint Storage Shed.
16) Soil staining at east foundation of Maint. Shop - waste oil(?) RAD Deposit C.
17) Soil stained SE of Maint Shop. waste oil(?)
18) Soil stain SW of Maint Shop waste oil(?)
19) Soil staining SW of Maint Shop - no source, slight staining - south west of trailer - 300 ft²
20) West of Maint Shop - slight staining - west of trailer 50 ft²
21) (5) drums (4) 5-gal cans, between trailer & shop - stained soil
22) Old pickup truck - Very black Stains - old oil, very black
23) Two Areas - ≈ 100 ft South of Shop - no source -
24) Toyota Pickup - engine in bed, leaked into soil - very black -
25) (7) drums (5) 5-gal cans - leaking. SAT. Soil
26) Pallets w/ 5-gal plastic Containers, green-Colored Stains, Yellow, Crystalline growth.
27) 3 broken batteries - no evidence of leakage at current loc.
28) Pond no evidence of SHS
29) Soil staining in embankment -
30) Paint storage shed.
31) Greenish-Gray Stained Soil. Copper vesicles, RAD Deposit W.
32) No evidence of Broken batteries.
33) Trash Pit - filled in(?)
34) (28) 55 gal drums - leaking, spilled, used to be (20).
35) Yellow loader - articulated trans/engine oil. Hydraulic fluid. - Disassembled
36) Stained soil under water truck - engine/Trans.
37) Large tank (10000 gal?) no evidence -

Surveyed in each location -

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